



37.5% (3/8)

NUMBER OF UNIT PULSE LENGTHS	MODULATOR BINARY OUTPUT COMBINATIONS	TIMER STATE	EFFECTIVE DUTY CYCLE
0	0 0	0	= 0% (0/8)
	0 0	1	
	0 0	0	
	0 0	1	
1	0 0	0	= 12.5% (1/8)
	0 1	1	
	0 1	0	
	0 0	1	
2	0 1	0	= 25% (2/8 = 1/4)
	0 1	1	
	0 1	0	
	0 1	1	
	0 0	0	
	1 0	1	
	1 0	0	
	0 0	1	
3	0 0	0	= 37.5% (3/8)
	1 1	1	
	1 1	0	
	0 0	1	
	0 1	0	
	1 0	1	
	1 0	0	
	0 1	1	
4	0 1	0	= 50% (4/8 = 1/2)
	1 1	1	
	1 1	0	
	0 1	1	
	1 0	0	
	1 0	1	
	1 0	0	
	1 0	1	
5	1 0	0	= 62.5% (5/8)
	1 1	1	
	1 1	0	
	1 0	1	
6	1 1	0	= 75% (6/8 = 3/4)
	1 1	1	
	1 1	0	
	1 1	1	

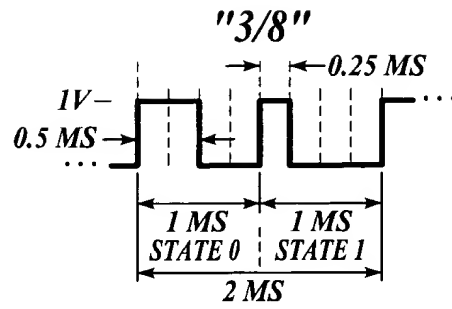


Fig. 3A

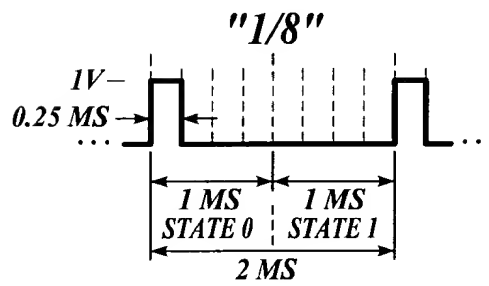


Fig. 3B

* INDICATES OVERFLOW BIT

DUTY CYCLE	POSSIBLE MODULATOR BINARY OUTPUT COMBINATIONS	TIMER STATE
0% (0/8)	0 0	0
	0 0	1
12.5% (1/8)	0 1	0
	0 0	1
	0 0	0
	0 1	1
25% (2/8)	0 0	0
	1 0	1
	1 0	0
	0 0	1
	0 1	0
	0 1	1
37.5% (3/8)	0 0	0
	1 1	1
	1 1	0
	0 0	1
	0 1	0
	1 0	1
50% (4/8)	1 0	0
	0 1	1
	1 0	0
	1 1	1
	1 1	0
	0 1	1
	1 0	0
	1 0	1
62.5% (5/8)	0 1	0
	1* 00	1
	1* 00	0
	0 1	1
	1 1	0
	1 0	1
75% (6/8)	1 0	0
	1 1	1
	1* 00	0
	1* 00	1
	1 1	0
	1 1	1
87.5% (7/8)	1* 00	0
	1 1	1
	1 1	0
	1* 00	1
100% (8/8)	1* 00	0
	1* 00	1

Fig.4

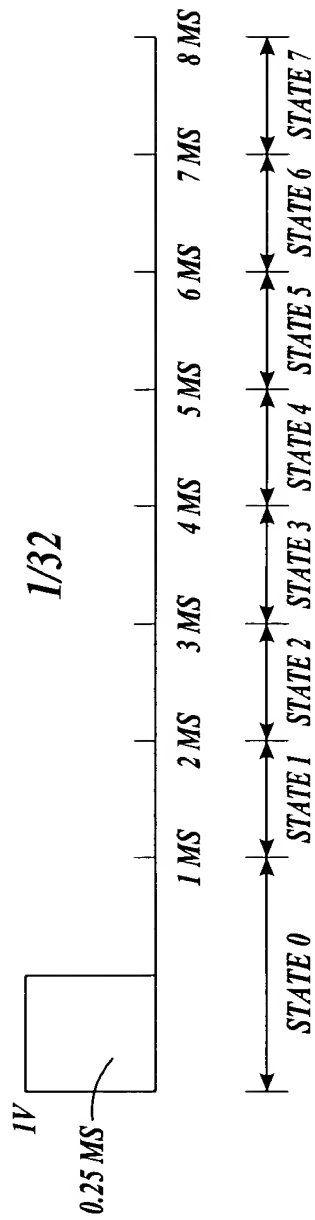


Fig. 5A

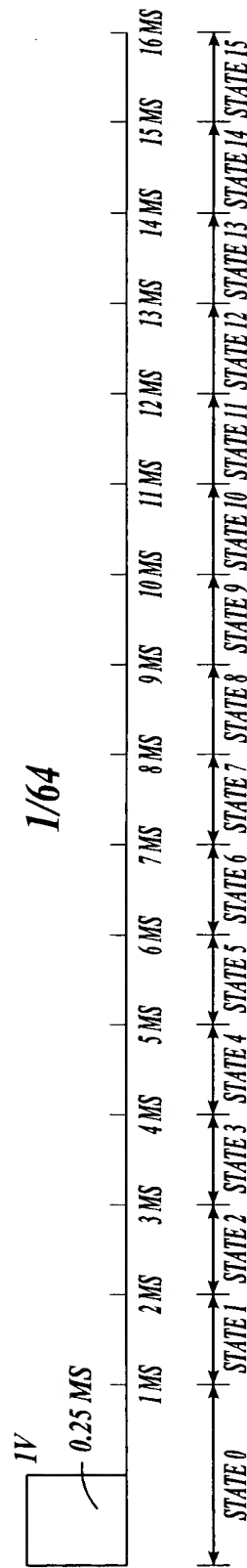
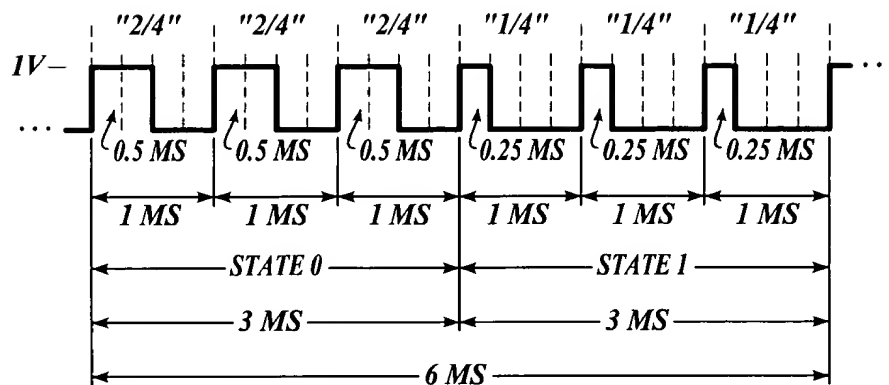
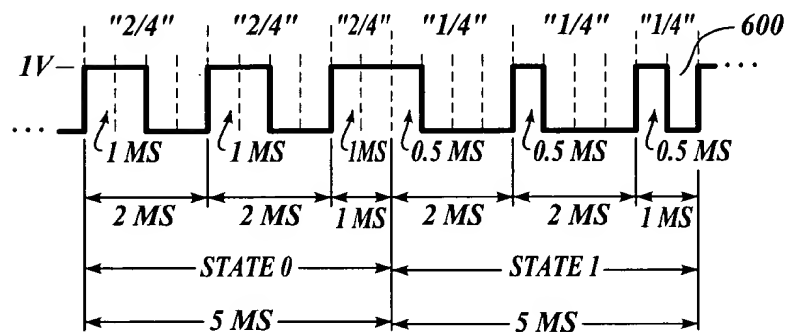


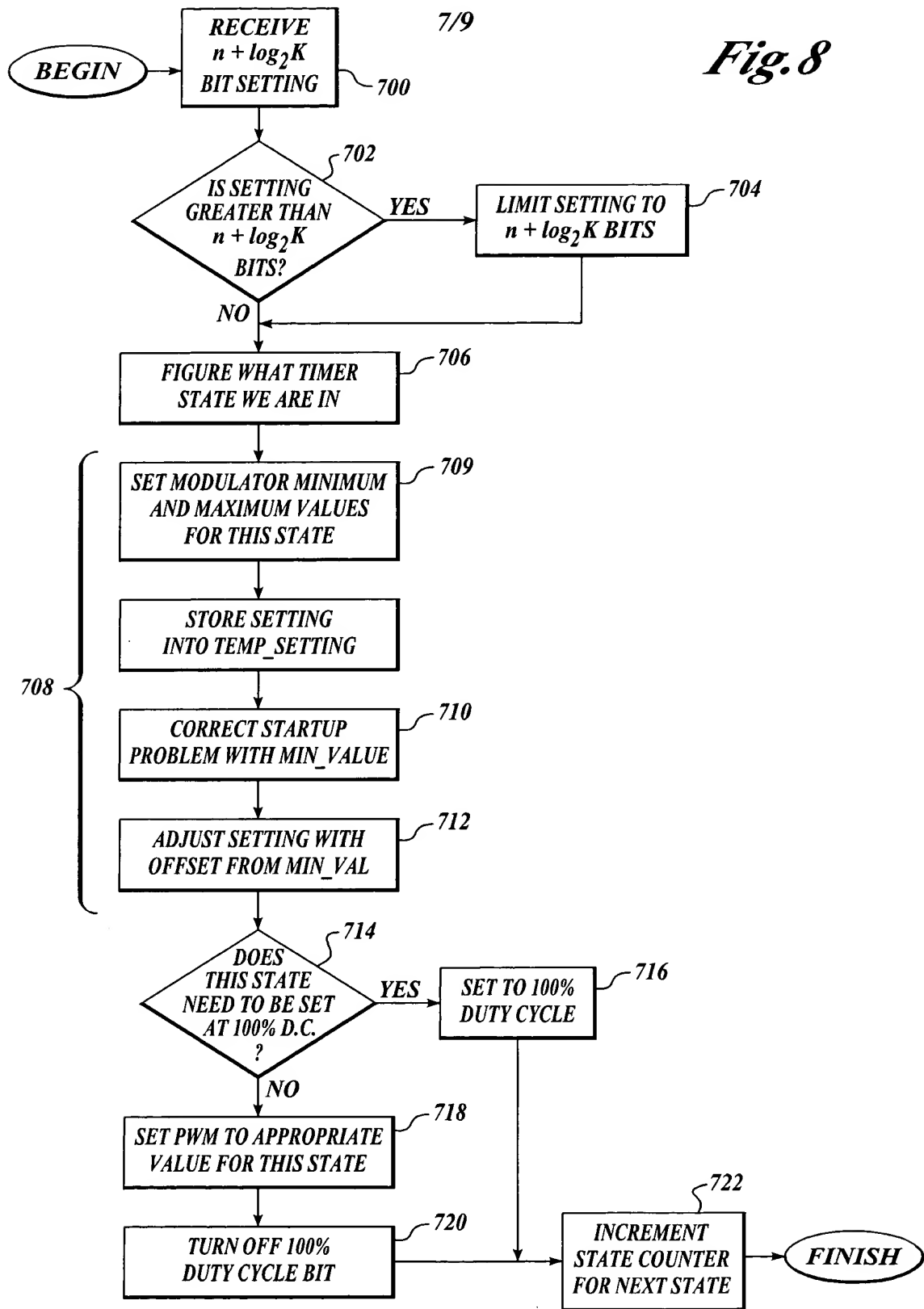
Fig. 5B

"3/8"**Fig. 6****"3/8 with error"**

PWM PERIOD = 2 MS, TIMER PERIOD = 5 MS

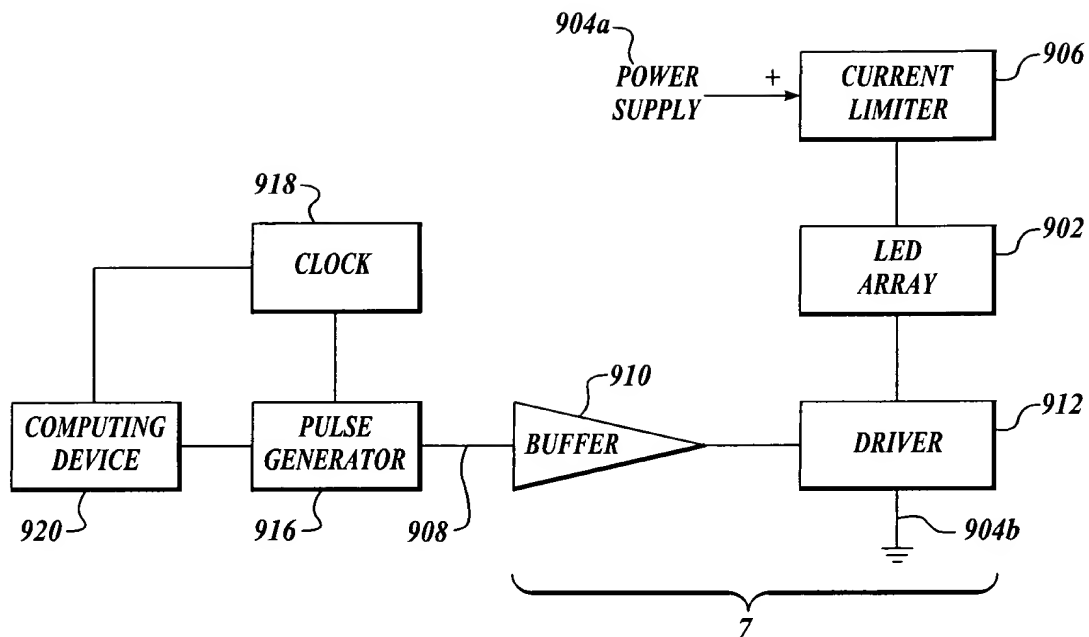
Fig. 7

Fig. 8



TOTAL PULSE DURATION AS MEASURED IN UNIT PULSE LENGTHS	MODULATOR OUTPUT IN EACH TIMER STATE							
	TIMER STATE							
	1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0
2	1	0	0	0	1	0	0	0
3	1	0	1	0	1	0	0	0
4	1	0	1	0	1	0	1	0
5	1	1	1	0	1	0	1	0
6	1	1	1	0	1	1	1	0
7	1	1	1	1	1	1	1	0
8	1	1	1	1	1	1	1	1
9	2	1	1	1	1	1	1	1
10	2	1	1	1	2	1	1	1
11	2	1	2	1	2	1	1	1
12	2	1	2	1	2	1	2	1
13	2	2	2	1	2	1	2	1
14	2	2	2	1	2	2	2	1
15	2	2	2	2	2	2	2	1
16	2	2	2	2	2	2	2	2
17	3	2	2	2	2	2	2	2
18	3	2	2	2	3	2	2	2
19	3	2	3	2	3	2	2	2
20	3	2	3	2	3	2	3	2
21	3	3	3	2	3	2	3	2
22	3	3	3	2	3	3	3	2
23	3	3	3	3	3	3	3	2
24	3	3	3	3	3	3	3	3
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
2040	255	255	255	255	255	255	255	255
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
2047	256	256	256	256	256	256	256	256

Fig. 9

*Fig. 10*